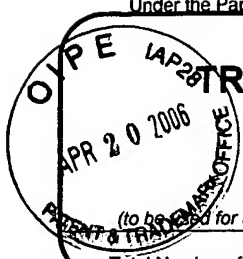


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Application Number

10/086,048

Filing Date

02/28/2002

First Named Inventor

Clara Maria Otero Perez

Art Unit

2195

Examiner Name

Majid A. Banankhah

Attorney Docket Number

PHNL 010127

ENCLOSURES (Check all that apply)



Fee Transmittal Form



Fee Attached



Amendment/Reply



After Final



Affidavits/declaration(s)



Extension of Time Request



Express Abandonment Request



Information Disclosure Statement



Certified Copy of Priority Document(s)

Reply to Missing Parts/
Incomplete ApplicationReply to Missing Parts
under 37 CFR 1.52 or 1.53

Drawing(s)



Licensing-related Papers



Petition

Petition to Convert to a
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After Allowance Communication to TC

Appeal Communication to Board
of Appeals and InterferencesAppeal Communication to TC
(Appeal Notice, Brief, Reply Brief)

Proprietary Information



Status Letter

Other Enclosure(s) (please identify
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Remarks

Enclosed is an Appeal Brief

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name

LEIMBACH ASSOCIATES

Signature

Printed name

James D. Leimbach

Date

April 10, 2006

Reg. No.

34,374

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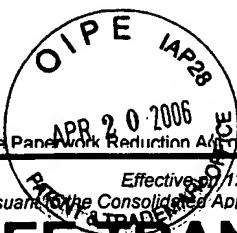
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Date

April 10, 2006

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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FEE TRANSMITTAL

For FY 2005

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$) 500.00

Complete if Known

Application Number	10/086,048
Filing Date	02/28/2002
First Named Inventor	Clara Maria Otero Perez
Examiner Name	Majid A. Banankhah
Art Unit	2195
Attorney Docket No.	PHNL010127

METHOD OF PAYMENT (check all that apply)

☐ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): _____

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For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

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FEE CALCULATION

1. BASIC FILING, SEARCH, AND EXAMINATION FEES

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	
Utility	300	150	500	250	200	100	_____
Design	200	100	100	50	130	65	_____
Plant	200	100	300	150	160	80	_____
Reissue	300	150	500	250	600	300	_____
Provisional	200	100	0	0	0	0	_____

2. EXCESS CLAIM FEES

Fee Description	Fee (\$)	Small Entity Fee (\$)
Each claim over 20 (including Reissues)	50	25
Each independent claim over 3 (including Reissues)	200	100
Multiple dependent claims	360	180
Total Claims		
_____ - 20 or HP = _____ x _____ = _____	Multiple Dependent Claims	
HP = highest number of total claims paid for, if greater than 20.	Fee (\$)	Fee Paid (\$)
Indep. Claims	_____	_____
_____ - 3 or HP = _____ x _____ = _____	Fee (\$)	Fee Paid (\$)
HP = highest number of independent claims paid for, if greater than 3.	_____	_____

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof	Fee (\$)	Fee Paid (\$)
_____ - 100 = _____ / 50 = _____ (round up to a whole number) x _____ = _____				

4. OTHER FEE(S)

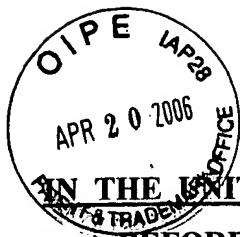
Non-English Specification, \$130 fee (no small entity discount) Fees Paid (\$)
Other (e.g., late filing surcharge): Petition for one month extension 500

SUBMITTED BY

Signature		Registration No. (Attorney/Agent) 34,374	Telephone (585) 381-9983
Name (Print/Type)	James D. Leimbach	Date 04/10/2006	

This collection of information is required by 37 CFR 1.136. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND
INTERFERENCES

In re Application of

Clara Maria Otero Perez et al.

METHOD OF AND SYSTEM FOR
WITHDRAWING BUDGET FROM
A BLOCKING TASK

Serial No. 10/086,048

Filed: February 28, 2002

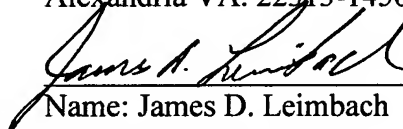
Confirmation No. 8816

Group Art Unit: 2195

Examiner: Majid A. Banankhah

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APPEAL BRIEF UNDER 37 C.F.R. § 41.37

04/20/2006 HDESTA1 00000042 503745 10086048

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Serial No. 10/086,048

Real party in interest

The real party of interest is the Assignee who is U. S. Philips Corporation, a corporation existing under the laws of the State of Delaware (hereinafter Appellant).

Related appeals and interferences

There are no related appeals or interferences to the present application that are known to appellants, the appellant's legal representative, or assignee which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

Status of the Claims

Claims 1-10 are drawn to a method and system for starting the first task to run during a predetermined time period, detecting that the first task blocks during the predetermined time period, and preventing that the first task resumes running during the predetermined time period. Claims 1-10 stand rejected as the claims that are currently being appealed. A copy of appealed claims 1-10 is contained in Appendix III following this brief.

Status of the Amendments After Final

A response was filed subsequent to the final rejection to overcome the Examiner's rejection of claims 1-10 under 35 U.S.C. §112, first paragraph, 35 U.S.C. §112, second paragraph and 35 U.S.C. §103(a). The Examiner in an Advisory Action dated February 8, 2006 indicated that the rejections of claims 1-10 under 35 U.S.C. §112, first paragraph, 35 U.S.C. §112, second paragraph and 35 U.S.C. §103(a) stand.

Summary of the Claimed Subject Matter

The appealed claims define subject matter for starting the first task to run during a predetermined time period, detecting that the first task blocks during the predetermined time period, and preventing that the first task resumes running during the predetermined time period.

Appealed claim 1 defines subject matter for a method of scheduling a first task as described with respect to Figures 2 and 3 including: a first step of starting the first task to run during a predetermined time period as discussed on page 5, lines 14-18 as tasks 202, 206 with respective periods $T_{202}=5$, $T_{206}=6$ and respective budgets $B_{202}=2$, $B_{206}=3$. In the discussion on

page 5, line 19-page 6, line 9, each of tasks 202, 206 is at some point in time blocked by the other. This blocking results in the missing of a deadline by task 206 because it has a lower priority. As discussed on page 6, lines 6-9, the missing of a deadline of a task with a lower priority as a result of resuming a blocking task with a higher priority is prevented by the main steps of an embodiment according to Figure 3.

Appealed claim1 further defines subject matter for a second step of detecting that the first task blocks during the predetermined time period. As described in relation to Figure 3, on page 6, lines 10-12, an embodiment according to a method of the invention has the periods of the tasks such that they are of equal length, the periods are consecutive and the periodic budgets are equal. On page 6, lines 19-20 the specification states that the budget of the leaving task is checked within step 302 of Figure 3. On page 6, lines 25-26 the specification states that when the remaining budget of the leaving task is greater than zero, the leaving task is blocking; thereby detecting that the first task blocks during the predetermined time period.

Appealed claim 1 further defines subject matter for a third step of preventing that the first task resumes running during the predetermined time period as described on page 6, lines 26-31 wherein the remaining budget of the blocking task is decreased to zero in step 304 of Figure 3 and that task will not be selected to operate again during the current period.

Appealed claim 5 defines subject matter for a system 400 for scheduling a first task as described in relation to Figure 4 on page 7, lines 3-33 of the specification. The running means 408 are CPU as discusses on page 7, lines 16-18 defined by appealed the claims are conceived to run the first task during a predetermined time period. The detection means are described on page 7, lines 22-26 as memory 414 with computer readable code retrieving information from memory 412; and when the retrieved information indicates that indicated that the task with the disabled budget is blocking, the blocking status is added to the contents of memory 412. The system defined by appealed claims 5 further defines preventing means conceived to prevent that the first task resumes running during the predetermined time period; these preventing means are described on page 7, lines 15-30 as CPU operating computer readable code within memory 414 and updating the reaming budget of the task for which the budget is disabled. As stated on page 7, lines 26-28, the remaining budget of the task is set to zero and its priority is set to background during the current period.

Appealed claim 6 defines subject matter for the system for scheduling a first task according to claim 5, wherein the detection means is further conceived to operate on the basis of a first priority of the first task that is suspended; as described on page 7, lines 26-28, wherein the priority of the disabled task is set to the background priority during the current period.

Appealed claim 6 further defines subject matter for a second priority of a second task that is resumed that is lower than the first priority of the first task; as discussed on page 7, 11-13, the second task has priority P_2 which is lower than the priority of the first task which is P_1 .

Appealed claim 6 further defines subject matter for a remaining budget of the first task that is substantially equal to an assigned budget for the period minus a consumed budget during the predetermined time period as described on page 6, lines 18-21.

Appealed claim 9 defines subject matter for a television set 510 as illustrated in Figure 5 including a system according to appealed claim 5, as described on page 8, lines 1-11.

Appealed claim 10 defines subject matter for a set-top box 602 as illustrated in Figure 6, including a system according to appealed claim 5, as described on page 8, lines 12-22.

Grounds of Rejection to be Reviewed on Appeal

The Advisory Action dated February 8, 2006 indicated that the rejections to claim 1-10 stand. Claims 1 through 10 are the appealed claims.

I. Appealed claims 1-10 are rejected under the provisions of 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement.

II. Appealed claims 1-10 are rejected under the provisions of 35 U.S.C. §112, second paragraph as being indefinite for failing to particularly point out and distinctly claim subject matter of invention.

III. Appealed claims 1, 5 and 7-10 are rejected under the provisions of 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 6,108,683 issued in the name of Kamada et al. (hereinafter referred to as *Kamada et al.*) in view of U.S. Patent No. 5,524,247 issued in the name of Mizuno (hereinafter referred to as *Mizuno*). It should be noted that the heading for this rejection in the November 10, 2005 Final Office Action states that only claims 1, 5 and 7-8 are covered by this rejection; however, page 9 of the Final Office Action states regarding claims 9-

10 to see the rejection of claims 5. Therefore, it is assumed that claims 9 and 10 are covered by this rejection also.

IV. Appealed claim 2, 3, 4 and 6 are rejected under the provisions of 35 U.S.C. §103(a) has been obvious over *Kamada et al.* in view of *Mizuno* and further in view of U.S. Patent No. 5,838,968 issued in the name of Culbert (hereinafter referred to as *Culbert*). It should be noted that the heading for this rejection in the November 10, 2005 Final Office Action states that only claim 2 is covered by this rejection; however, page 8-9 of the Final Office Action presents arguments regarding claims 3, 4 and 6 under this rejection. Therefore, it is assumed that claims 3, 4 and 6 are covered by this rejection also.

Argument

I. The rejection of appealed claims 1-10 under the provisions of 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement.

A. The rejection of appealed claims 1-10 under the provisions of 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement.

Claims 1-10 are rejected under the provisions of 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. The rejection alleges that appealed claims 1-10 contain subject matter which is not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The MPEP at §2163 states that in order to “satisfy the written description requirement, a patent specification must describe the claimed invention in sufficient detail that one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention.” *Moba, B.V. v. Diamond Automation, Inc.*, 325 F.3d 1306, 1319, 66 USPQ2d 1429, 1438 (Fed. Cir. 2003).

B. Appellants arguments for appealed claims 1-10 satisfying the provisions of 35 U.S.C. §112, first paragraph, as complying wit the written description requirement.

Appealed Claims 1-10

The rejected alleges that the specification does not teach how a task is started during a predetermined time period. The appellants, respectfully, draw the Board's attention to the specification of the present invention on page 4, lines 6-7 which states that within "high-quality systems, a task can have a predefined number of periods during which it is allowed to run."

The specification to the present invention details embodiments of real time operating systems (page 4, lines 14-27). The specification to the present invention on page 5, lines 19-20 states that each task is ready to run at the beginning of its period and is therefore started to run at the beginning of a period; clearly demonstrating possession of tasks that are started at a predetermined time period. Referring to the discussion related to Figure 2, the period T of task is clearly defined on page 5, lines 14-17 as being a periodic task, indicated predetermined periods. It is clearly stated on page 5, lines 19-20 that each "task is ready to run at the beginning of its periods and it is therefore started at the beginning of a period"; which demonstrates that the appellants are disclosing to the public possession of an operating system that could schedule tasks to beginning in a predetermined time periods. On page 5, lines 20-21 the specification states that the "arrow indicates the beginning of a period, T_{ij} indicates the period T of task i and for period j "; clearly illustrating possession of a task that is started during a predetermined time period.

The appellants further draw the Board's attention to the discussion related to real time processing and task management contained within the specification. On page 5, beginning on line 14, the specification discusses Figure 2 and periodic tasks. The periodic tasks have priorities, periods and budgets. Each task has a period and the period is known, therefore, predetermined. That the periods for the tasks are known (predetermined) will be readily apparent to any person skilled within the art.

A predetermined time period as discussed on page 5, lines 14-18 as tasks 202, 206 with respective periods $T_{202}=5$, $T_{206}=6$ and respective budgets $B_{202}=2$, $B_{206}=3$. Page 5, lines 22-23 of the specification states that "task 202 starts at 210, because that is the start time of its first period $T_{202,1}$." Clearly demonstrating that the appellants had possession of task starting at predetermined time periods on the date the present application for invention was filed.

The appellants, respectfully, asserts that a person skilled in the art will understand that tasks within the real time operating systems as described within the specification to present invention operate within predetermined time periods and that the scheduling of tasks takes place in consideration of these predetermined time periods. A person skilled in the art would understand from the specification to the present invention that the appellants had possession of the appealed claims as the time of filing the original specification to the present invention. The appellants, respectfully, assert that the specification does teach that a task is started during a predetermined time period.

II. The rejection of appealed claims 1-10 under the provisions of 35 U.S.C. §112, second paragraph, as failing to set forth the subject matter which the applicant regard as the invention.

A. The rejection of appealed claims 1-10 under the provisions of 35 U.S.C. §112, second paragraph, as failing to set forth the subject matter which the applicant regard as the invention.

Claims 1-10 are rejected under the provisions of 35 U.S.C. §112, second paragraph, as failing to comply set forth the subject matter which the applicant regard as the invention. The rejection alleges that the specification does not mention that the first task is started during a predetermined time period.

The MPEP at §2171 states that there are two Separate Requirements for claims under 35 U.S.C. §112, second paragraph, (A) the claims must set forth the subject matter that applicants regard as their invention, and (B) the claims must particularly point out and distinctly define the metes and bounds of the subject matter that will be protected by the patent grant.

The MPEP at §2172 states regarding (A) subject matter which applicants regard as their invention that a “rejection based on the failure to satisfy this requirement is appropriate only where applicant has stated, somewhere other than in the application as filed, that the invention is something different from what is defined by the claims. In other words, the invention set forth in the claims must be presumed, in the absence of evidence to the contrary, to

be that which applicants regard as their invention. *In re Moore*, 439 F.2d 1232, 169 USPQ 236 (CCPA 1971).”

The MPEP at §2172 further states that “the content of applicant's specification is not used as evidence that the scope of the claims is inconsistent with the subject matter which applicants regard as their invention. As noted in *In re Ehrreich*, 590 F.2d 902, 200 USPQ 504 (CCPA 1979), agreement, or lack thereof, between the claims and the specification is properly considered only with respect to 35 U.S.C. 112, first paragraph; it is irrelevant to compliance with the second paragraph of that section.”

B. Appellants arguments for appealed claims 1-10 satisfying the provisions of 35 U.S.C. §112, second paragraph, as complying with the requirement to set forth the subject matter regarded as the invention

Appealed Claims 1-10

The rejection alleges the specification does not mention that the first task is started during a predetermined time period.

The appellants, respectfully, assert that this rejection is not a proper under the provisions of 35 U.S.C. §112, second paragraph, as failing to comply set forth the subject matter which the appellants regard as the invention. This is the same rejection as that discussed, *supra*, related to the rejection under 35 U.S.C. §112, first paragraph. Agreement, or lack thereof, between the claims and the specification is properly considered only with respect to 35 U.S.C. 112, first paragraph; it is irrelevant to compliance with the second paragraph of that section. *In re Ehrreich*, 590 F.2d 902, 200 USPQ 504 (CCPA 1979).

The rejected alleges that the appealed claims fail to set forth the subject matter which the appellants regard as the invention. The appellants, respectfully, draw the Board’s attention to the specification of the present invention on page 4, lines 6-7 which states that within “high-quality systems, a task can have a predefined number of periods during which it is allowed to run.”

The specification to the present invention details embodiments of real time operating systems (page 4, lines 14-27). The specification to the present invention on page 5,

lines 19-20 states that each task is ready to run at the beginning of its period and is therefore started to run at the beginning of a period; clearly setting forth subject matter defined by the appealed claims that tasks are started at a predetermined time period. Referring to the discussion related to Figure 2, the period T of task is clearly defined on page 5, lines 14-17 as being a periodic task, indicated predetermined periods. It is clearly stated on page 5, lines 19-20 that each “task is ready to run at the beginning of its periods and it is therefore started at the beginning of a period”; which sets forth an operating system that could schedule tasks to beginning in a predetermined time periods. On page 5, lines 20-21 the specification states that the “arrow indicates the beginning of a period, T_{ij} indicates the period T of task I and for period j ”; clearly setting forth subject matter defined by the appealed claims that tasks are started during a predetermined time period.

The appellants further draw the Board’s attention to the discussion related to real time processing and task management contained within the specification. On page 5, beginning on line 14, the specification discusses Figure 2 and periodic tasks. The periodic tasks have priorities, periods and budgets. Each task has a period and the period is known, therefore, predetermined. That the periods for the tasks are known (predetermined) clearly sets forth the subject matter defined by the appealed claims for task starting at predetermined time periods

A predetermined time period as discussed on page 5, lines 14-18 as tasks 202, 206 with respective periods $T_{202}=5$, $T_{206}=6$ and respective budgets $B_{202}=2$, $B_{206}=3$. Page 5, lines 22-23 of the specification states that “task 202 starts at 210, because that is the start time of its first period $T_{202,1}$.” Clearly setting forth the subject matter defined by the appealed claims for a first task to start at a predetermined time period.

The appellants, respectfully, asserts that a person skilled in the art will understand that tasks within the real time operating systems as described within the specification to present invention operate within predetermined time periods and that the scheduling of tasks takes place in consideration of these predetermined time periods. A person skilled in the art would understand from the specification to the present invention that the appellants had possession of the appealed claims as the time of filing the original specification to the present invention. The appellants, respectfully, assert that the specification does teach that a task is started during a predetermined time period.

The invention as set forth in the claims must be presumed, in the absence of evidence to the contrary, to be that which applicants regard as their invention. *In re Moore*, 439 F.2d 1232, 169 USPQ 236 (CCPA 1971). The foregoing argument illustrates the support for the subject matter of a task, specifically, a first task, starting at a predetermined time period. The rejection does not provide any evidence to contradict the clear recitation defined by the appealed claims for a first task starting at a predetermined time period that, as discussed above, is supported by the specification to the present invention.

III. The rejection of appealed claims 1, 5 and 7-8 are rejected under the provisions of 35 U.S.C. §103(a) as being as being obvious over Kamada et al. in view of Mizuno.

A. The rejection of appealed claims 1, 5 and 7-10 under 35 U.S.C. S 103(a)

Claims 1, 5 and 7-8 are rejected under the provisions of 35 U.S.C. §103(a) as being as being obvious over US Patent No. 6,108,683 issued in the name of Kamada et al. (hereinafter referred to as *Kamada et al.*) in view of US Patent No. 5,524,247 issued in the name of Mizuno (hereinafter referred to as *Mizuno*). The Examiner's position is that *Kamada et al.* teach all of the subject matter defined by the rejected claims except that *Kamada et al.* do not disclose the blocking and preventing of the first task from resuming during the period but that this subject matter is taught by *Mizuno*.

The MPEP at §2142 states that "the legal concept of *prima facie* obviousness is a procedural tool of examination which applies broadly to all arts. It allocates who has the burden of going forward with production of evidence in each step of the examination process. See *In re Rinehart*, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976)." The MPEP at §2142 further states that the examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness."

The MPEP at § 2142 further states that in order to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some

suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed invention and the reasonable expectation of success must both be found in the prior art, and not based on the applicant's disclosure.

The MPEP at §2143.01 states that if proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

The MPEP at §2143.01 states that if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).

B. The references

Kamada et al. (US Patent No. 5,524,247) teach a computer system process scheduler that establishes fixed priorities. The process scheduler provides a fixed priority real-time scheduler space. The process scheduler has a first priority real time class. Other processes have a lower priority than the first priority real time class (see Abstract). *Kamada et al.* teach that the use of priorities means that a process having a higher level priority is preferentially executed (see col. 10, lines 18-20). *Kamada et al.* discuss that the user level process scheduler 10 is set to run at the highest priority (see col. 10, lines 25-32). *Kamada et al.* further discuss that that user processes 12-1 and 12-2 are scheduled to be executed at the next highest priority (see col. 10, lines 32-35).

Kamada et al. teach the detection of blocking user processes. Specifically, process 12-2 is blocked (see col. 23, line 28-col. 24, line 50). *Kamada et al.* teach that in response to detection of a block process, the blocked process goes into a sleep mode (see col. 23, line 64-col. 24, line 50). There is no disclosure or suggestion within *Kamada et al.* that prevent the blocking

process for operating or resuming operation. In fact it would be contrary to the teaching of *Kamada et al.* to prevent the user level process that is set to run at the highest priority from running.

Mizuno (US Patent No. 5,524,247) teaches scheduling the resource including the CPU being allocated to any state other than the “lock wait” state. The “lock variable” is defined by *Mizuno* on col. 1, lines 52-59 as a shared variable used by numerous threads (tasks). The “lock wait” state occurs once one of the threads is currently using the shared variable (see col. 1, lines 60-64) to prevent other threads from using the shared resource. There is no disclosure or suggestion that within *Mizuno* that any of the other threads are prevented from running while the shared resource is in the “lock wait” state.

Mizuno at col. 7, lines 53-59 states that thread 3 remains in the lock state during the first execution time and that CPU is allocated to thread 3 during the second execution time. When thread 3 is released from the lock states during the second execution time, the CPU is assigned to thread 1 which has been in the locked state. There is no disclosure or suggestion that within *Mizuno* that any of the other threads are prevented from running while the shared resource is in the “lock wait” state.

C. The differences between the invention and the references

Appealed claims 1, 5 and 7-10

The rejection admits that *Kamada et al.* do not disclose or suggest preventing the blocking process for operating or resuming operation. The appellants respectfully assert that it would be contrary to the teaching of *Kamada et al.* to prevent the user level process that is set to run at the highest priority from running.

The attempts by the rejection to modify *Kamada et al.* such that the blocking process or task would be prevented from running would render the *Kamada et al.* so modified unsatisfactory for its intended purpose. *Kamada et al.* teach that the use of priorities for processes which means that a process having a higher level priority is preferentially executed (see col. 10, lines 18-20). *Kamada et al.* discuss that the user level process scheduler 10 is set to run at the highest priority (see col. 10, lines 25-32) and that that user processes 12-1 and 12-2 are

scheduled to be executed at the next highest priority (see col. 10, lines 32-35). The system of *Kamada et al.* is based upon the premise that upon detection of blocking of user processes such as 12-2 the blocked process goes into a sleep mode (see col. 23, line 64-col. 24, line 50). There is no disclosure or suggestion within *Kamada et al.* that prevent the blocking process for operating or resuming operation. In fact preventing the highest priority user level process from running, would render the *Kamada et al.* unsatisfactory for its intended purpose. Here the intended purpose is to allow the highest priority process to run.

Furthermore the proposed modification or combination of would change the principle of operation of *Kamada et al.* so modified. The basic principle of operation for *Kamada et al.* is that the highest priority process be allowed to run at the expense of the next highest priority level process. Therefore, the combination made by the rejection does not present teachings sufficient to render the claims *prima facie* obvious.

The examiner's position taken in the rejection is that *Mizuno* teaches scheduling the resource including the CPU being allocated to any state other than the "lock wait" state. The appellants, respectfully, point out that the "lock variable" is defined by *Mizuno* on col. 1, lines 52-59 as a shared variable used by numerous threads (tasks). The "lock wait" state occurs once one of the threads is currently using the shared variable (see col. 1, lines 60-64) to prevent other threads from using the shared resource. There is no disclosure or suggestion within *Mizuno* that any of the other threads are prevented from running while the shared resource is in the "lock wait" state. The rejection refers to col. 7, lines 53-59 and states that T3 remains in the lock state during the first execution time. The appellant, respectfully, point out that the rejected claims defines subject matter for preventing the first task from resuming running during the predetermined time period. *Mizuno* does not disclose or suggest preventing of a first task from resuming running during the predetermined time period. The subject matter for preventing that the first task from resuming running during the predetermined time period is not disclosed or suggested by *Mizuno* with *Kamada et al.*, either alone or in combination.

IV. The rejection of appealed claims 2-4 and 6 are rejected under the provisions of 35 U.S.C. §103(a) as being as being obvious over US Patent No. 6,108,683 issued in the name of Kamada et al. in view of Mizuno and further in view Culbert.

A. The rejection of appealed claims 2-4 and 6 under 35 U.S.C. S 103(a)

Appealed claims 2-4 and 6 are rejected under the provisions of 35 U.S.C. 103(a) as being obvious over *Kamada et al.* in view of *Mizuno* and further in view of US Patent No. 5,838,968 issued in the name of Culbert (hereinafter referred to as *Culbert*). The examiner's position is that the combination of *Kamada et al.* with *Mizuno* does not teach the subject matter for "context switching"; but that *Culbert* teaches this subject matter.

The MPEP at §2142 states that "the legal concept of *prima facie* obviousness is a procedural tool of examination which applies broadly to all arts. It allocates who has the burden of going forward with production of evidence in each step of the examination process. See *In re Rinehart*, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976)." The MPEP at §2142 further states that the examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness."

The MPEP at § 2142 further states that in order to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed invention and the reasonable expectation of success must both be found in the prior art, and not based on the applicant's disclosure.

The MPEP at §2143.01 states that if proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

The MPEP at §2143.01 states that if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified,

then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).

B. The references

Kamada et al. (US Patent No. 5,524,247) teach a computer system process scheduler that establishes fixed priorities. The process scheduler provides a fixed priority real-time scheduler space. The process scheduler has a first priority real time class. Other processes have a lower priority than the first priority real time class (see Abstract). *Kamada et al.* teach that the use of priorities means that a process having a higher level priority is preferentially executed (see col. 10, lines 18-20). *Kamada et al.* discuss that the user level process scheduler 10 is set to run at the highest priority (see col. 10, lines 25-32). *Kamada et al.* further discuss that that user processes 12-1 and 12-2 are scheduled to be executed at the next highest priority (see col. 10, lines 32-35).

Kamada et al. teach the detection of blocking user processes. Specifically, process 12-2 is blocked (see col. 23, line 28-col. 24, line 50). *Kamada et al.* teach that in response to detection of a block process, the blocked process goes into a sleep mode (see col. 23, line 64-col. 24, line 50). There is no disclosure or suggestion within *Kamada et al.* that prevent the blocking process for operating or resuming operation. In fact it would be contrary to the teaching of *Kamada et al.* to prevent the user level process that is set to run at the highest priority from running.

Mizuno (US Patent No. 5,524,247) teaches scheduling the resource including the CPU being allocated to any state other than the “lock wait” state. The “lock variable” is defined by Mizuno on col. 1, lines 52-59 as a shared variable used by numerous threads (tasks). The “lock wait” state occurs once one of the threads is currently using the shared variable (see col. 1, lines 60-64) to prevent other threads from using the shared resource. There is no disclosure or suggestion that within *Mizuno* that any of the other threads are prevented from running while the shared resource is in the “lock wait” state.

Mizuno at col. 7, lines 53-59 states that thread 3 remains in the lock state during the first execution time and that CPU is allocated to thread 3 during the second execution time. When thread 3 is released from the lock states during the second execution time, the CPU is

assigned to thread 1 which has been in the locked state. There is no disclosure or suggestion that within *Mizuno* that any of the other threads are prevented from running while the shared resource is in the “lock wait” state.

Culbert relates to dynamic resource management in real-time operating systems. *Culbert* teaches programming techniques that globally optimize and dynamically manage system resources. A task utilization vector details task resources. The task utilization records a run level that reflects the associated task’s ability to perform its work according to a particular resource utilization record. The run level dynamically varies the system resources allocated to a task (see Abstract). The appellants, respectfully, point out that “context switching” as discussed by a *Culbert* on col. 4, lines 60-61 is “the act of changing out one task currently executing on a processor for another task”. The appellants, further point out that “context switching” as discussed by a *Culbert* on col. 5, lines 38-40 is still only related to changing out one task currently executing on a processor for another task. There is no disclosure or suggestion within *Culbert* for detecting that a task blocks during the predetermined time period is based upon context switch information.

C. The differences between the invention and the references

AS previously discussed, the rejection admits that *Kamada et al.* do not disclose or suggest preventing the blocking process for operating or resuming operation. The appellants respectfully assert that it would be contrary to the teaching of *Kamada et al.* to prevent the user level process that is set to run at the highest priority from running. The attempts by the rejection to modify *Kamada et al.* such that the blocking process or task would be prevented from running would render the *Kamada et al.* so modified unsatisfactory for its intended purpose. *Kamada et al.* teach that the use of priorities for processes which means that a process having a higher level priority is preferentially executed (see col. 10, lines 18-20). *Kamada et al.* discuss that the user level process scheduler 10 is set to run at the highest priority (see col. 10, lines 25-32) and that that user processes 12-1 and 12-2 are scheduled to be executed at the next highest priority (see col. 10, lines 32-35). The system of *Kamada et al.* is based upon the premise that upon detection of blocking of user processes such as 12-2 the blocked process goes into a sleep mode (see col. 23, line 64-col. 24, line 50). There is no disclosure or suggestion within *Kamada et al.* that prevent the blocking process for operating or resuming operation. In fact preventing the highest

priority user level process from running, would render the *Kamada et al.* unsatisfactory for its intended purpose. Here the intended purpose is to allow the highest priority process to run.

Furthermore the proposed modification or combination of would change the principle of operation of *Kamada et al.* so modified. The basic principle of operation for *Kamada et al.* is that the highest priority process be allowed to run at the expense of the next highest priority level process. Therefore, the combination made by the rejection does not present teachings sufficient to render the claims *prima facie* obvious.

The examiner's position taken in the rejection is that *Mizuno* teaches scheduling the resource including the CPU being allocated to any state other than the "lock wait" state. The appellants, respectfully, point out that the "lock variable" is defined by *Mizuno* on col. 1, lines 52-59 as a shared variable used by numerous threads (tasks). The "lock wait" state occurs once one of the threads is currently using the shared variable (see col. 1, lines 60-64) to prevent other threads from using the shared resource. There is no disclosure or suggestion within *Mizuno* that any of the other threads are prevented from running while the shared resource is in the "lock wait" state. The rejection refers to col. 7, lines 53-59 and states that T3 remains in the lock state during the first execution time. The appellant, respectfully, point out that the rejected claims defines subject matter for preventing the first task from resuming running during the predetermined time period. *Mizuno* does not disclose or suggest preventing of a first task from resuming running during the predetermined time period. The subject matter for preventing that the first task from resuming running during the predetermined time period is not disclosed or suggested by *Mizuno* with *Kamada et al.*, either alone or in combination.

Appealed claim 2

Appealed claim 2 defines subject matter for the method defined by appealed claim 1, wherein the second step of detecting that the first task blocks during the predetermined time period is based upon context switch information. Appealed claim 2 defines subject matter for the second step of detecting that the first task blocks during the predetermined time period is based upon context switch information. The appellants, respectfully, point out that the definition and use of context switching within *Culbert* is completely inconsistent with that definition that is supplied context switching within appealed claim 2. Therefore, while *Culbert* employs the term context switching, the definition supplied that term is wholly inconsistent with the definition

supplied that term by appealed claim 2. There is no disclosure or suggestion within *Culbert* to implement context switch information to detect that a task is blocking. There is no disclosure or suggestion for the by *Mizuno, Kamada et al.*, or *Culbert* either alone or in combination for the context switch information to detect that a task is blocking.

Appealed claim 3

Appealed claim 3 defines subject matter for the method of scheduling a first task according to appealed claim 2, wherein the second step of detecting that the first task blocks during the predetermined time period includes: a first sub-step of detecting that the first task is suspended and that a second task is allowed to start running; and wherein the context switch information includes: a second priority of the second task that is lower than a first priority of the first task, and a remaining budget of the first task that is substantially equal to an assigned budget for the period minus a consumed budget during the predetermined time period.

The appellants, respectfully, point out that the definition and use of context switching within *Culbert* is completely inconsistent with that definition that is supplied context switching within appealed claim 3. Therefore, while *Culbert* employs the term context switching, the definition supplied that term is wholly inconsistent with the definition supplied that term by appealed claim 3. There is no disclosure or suggestion within *Culbert* to implement context switch information to detect that a task is blocking, wherein the context switch information includes: a second priority of the second task that is lower than a first priority of the first task, and a remaining budget of the first task that is substantially equal to an assigned budget for the period minus a consumed budget during the predetermined time period. There is no disclosure or suggestion for the by *Mizuno, Kamada et al.*, or *Culbert* either alone or in combination for the context switch information includes: a second priority of the second task that is lower than a first priority of the first task, and a remaining budget of the first task that is substantially equal to an assigned budget for the period minus a consumed budget during the predetermined time period.

Appealed claim 4

Appealed claim 4 defines subject matter for the method of scheduling a first task according to appealed claim 3, wherein the remaining budget is withdrawn from the

first task during the predetermined time period. The appellants, respectfully, point out that “context switching” as defined by a *Culbert* on col. 4, lines 60-61 is “the act of changing out one task currently executing on a processor for another task”. Appealed claims 2, 3 and 4 define subject matter for the second step of detecting that the first task blocks during the predetermined time period is based upon context switch information. The definition and use of context switching within *Culbert* is completely inconsistent with that definition that is supplied context switching within rejected Claim 2. Therefore, while *Culbert* employs the term context switching, the definition supplied that term is wholly inconsistent with the definition supplied that term by rejected Claim 2. There is no disclosure or suggestion within *Culbert* to implement context switch information to detect that a task is blocking. There is no disclosure or suggestion for the by *Mizuno, Kamada et al.*, or *Culbert* either alone or in combination to implement context switch information to detect that a task is blocking.

Appealed claim 6

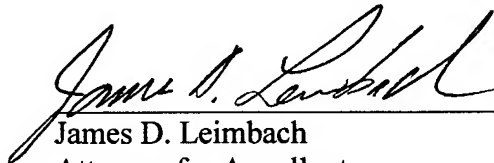
Appealed claim 6 defines subject matter for the system of scheduling a first task according to appealed claim 5, wherein the detection means is further conceived to operate on the basis of: a first priority of the first task that is suspended, a second priority of a second task that is resumed that is lower than the first priority of the first task, a remaining budget of the first task that is substantially equal to an assigned budget for the period minus a consumed budget during the predetermined time period. The examiner’s position is that *Culbert* teach “suspend and resume” at col. 6, lines 47-50. The appellants point out that there is no disclosure or suggestion within the cited references for detecting that the first task blocks during the period as defined by appealed claim 6. Moreover, there is no disclosure or suggestion within the cited references for detecting that the first task blocks during the predetermined time period as defined by appealed claim 6. There is no disclosure or suggestion within *Mizuno, Kamada et al.*, or *Culbert* either alone or in combination for the detection means is further conceived to operate on the basis of: a first priority of the first task that is suspended, a second priority of a second task that is resumed that is lower than the first priority of the first task, a remaining budget of the first task that is substantially equal to an assigned budget for the period minus a consumed budget during the predetermined time period.

Conclusion

In summary, the examiner's rejections of the claims are believed to be in error for the reasons explained above. The rejections of each of claims 1-10 should be reversed.

The Commissioner is authorized to charge fees associated with the filing of this brief to Account No. 50-3745 including any underpayments, excluding the payment of any issue fees, and to credit any overpayments to the same account.

Respectfully submitted,



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APPENDIX I. Evidence on Appeal

“None”

APPENDIX II. Related Proceedings

“None”

APPENDIX III. Claims on Appeal

1. A method of scheduling a first task comprising the following steps:
 - a first step of starting the first task to run during a predetermined time period,
 - a second step of detecting that the first task blocks during the predetermined time period,
 characterized in that the method further comprises:
 - a third step of preventing that the first task resumes running during the predetermined time period.

2. The method of scheduling a first task according to claim 1, wherein the second step is based upon context switch information.

3. The method of scheduling a first task according to claim 2, wherein the second step of detecting that the first task blocks during the predetermined time period comprises:
 - a first sub-step of detecting that the first task is suspended and that a second task is allowed to start running;
 and wherein the context switch information comprises:
 - a second priority of the second task that is lower than a first priority of the first task, and
 - a remaining budget of the first task that is substantially equal to an assigned budget for the period minus a consumed budget during the predetermined time period.

4. The method of scheduling a first task according to claim 3, wherein the remaining budget is withdrawn from the first task during the predetermined time period.

5. A system for scheduling a first task comprising:
 - running means conceived to run the first task during a predetermined time period,
 - detection means conceived to detect a blocking status of the first task
 characterized in that the system further comprises:
 - preventing means conceived to prevent that the first task resumes running during the predetermined time period.

6. A system for scheduling a first task according to claim 5, wherein the detection means is further conceived to operate on the basis of:

a first priority of the first task that is suspended,

a second priority of a second task that is resumed that is lower than the first priority of the first task,

a remaining budget of the first task that is substantially equal to an assigned budget for the period minus a consumed budget during the predetermined time period.

7. A computer program product arranged to perform the method according to claim 1.

8. A storage device (420) comprising a computer program product according to claim 7.

9. A television set (510) comprising a system according to claim 5.

10. A set-top box (602) comprising a system according to claim 5.